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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

SUKMAN, GABRIEL S

ART UNIT PAPER NUMBER

3641

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/604,576

Applicant(s)

SEBASTO ET AL.

Examiner

Gabriel S. Sukman

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-27, and 29-33 is/are rejected.
- 7) ☒ Claim(s) 12 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Drawings*

The drawings were received on 22 September 2003. These drawings are acceptable.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 13-16 and 29-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13 and 29 recite the limitation "the energetic composite is comprised of an energetic material *selected essentially from the group of....*" It is unclear what is meant by selecting a material *essentially* from a group and whether the claim actually intends to include in the invention the materials listed in the group. Correction is required. Secondly, the last item of the group recites "energetic material," thus negating any limiting effect the recitation of particular energetic materials in the Markush claim would have on the scope of the claim. In other words, if the claim intends to retain the breadth of any "energetic material," then there is no need to recite particular materials. But if the claim intends to reduce the scope by including only those energetic materials listed, then the recitation of "energetic material" as an item in the list should be deleted.

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The above comments with respect to the transitional phrase also apply to claims 14, 15, 30, and 31. The use of the phrase "comprised essentially of a group of" is likewise indefinite. The comments regarding the listing of "energetic material" in the Markush list also apply to claims 14 and 30.

Claims 16 and 32 depend from claims 15 and 31, respectively, and are therefore indefinite as well.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 14, 17-24, 30, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,598,644 to Romer et al. (hereinafter referred to as Romer).

Claim 1 is clearly anticipated by the sabot projectile of Romer. Romer discloses a region of the sabot that burns away at a controlled rate (see col. 1, lines 61-67) to reduce the parasitic weight of the projectile (the "dead weight" in col. 1, lines 30-31) as it travels through the gun tube.

Claims 2-4 are clearly anticipated by the material disclosed by Romer.

Claim 5 is anticipated by Romer since it is disclosed that the weight of the projectile is thereby reduced by the burning of the propellant material.

Claim 6 is anticipated by Romer since the disclosure that refers to the reduction of the dead weight of the projectile and the use of propellant material inherently means to increase the velocity.

Claim 7 is clearly anticipated by Romer since the base of the sabot (56 and 58) remains intact after the propellant material is consumed.

Claim 8 is clearly anticipated by Romer.

Claim 14 is anticipated by Romer since the propellant charge is considered to be a "composite tape" and is an "energetic material."

Claims 17-24 and 30 are anticipated by Romer as well since they correspond in substance to claims 1-8 and 14, respectively, and since Romer discloses a kinetic energy projectile. Claim 33 is likewise anticipated since Romer inherently discloses that the projectile is a part of a cartridge.

Claims 1-8, 14, 17-24, 30, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,936,220 to Burns et al. (hereinafter referred to as Burns).

Burns discloses a propellant carrying sabot projectile that clearly teaches the limitations of claims 1-8, 14, 17-24, 30, and 33. See, in particular, the discussion in col. 4, lines 33-64 and col. 5, lines 52-65.

Claims 1-9, 11, 14, 17-25, 27, 30, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,967,668 to Warren.

The sabot projectile of Warren including an energetic region (propellant, 365) clearly discloses all of the limitations of claims 1-8, 14, 17-24, 30, and 33.

Warren also teaches the limitations of claims 9, 11, 25, and 27 because the sabot base is taught to be made of an aluminum alloy (col. 3, lines 54-55).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Romer, Burns, or Warren in view of *Science & Technology Review*, May 1999, page 6 ("STR").

Each of Romer, Burns, and Warren disclose a projectile having all of the limitations of claims 10 and 26 as discussed above but do not specify in particular that the sabot is made of composite materials. However, making sabots of composite materials is well known in the art to reduce weight as is taught by the article in STR. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the sabot of either Romer, Burns, or Warren out of composite materials as taught by the STR article in order to reduce the weight of the sabot, thereby allowing the projectile to achieve a greater velocity.

***Allowable Subject Matter***

Claims 12 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 13, 15, 16, 29, 31, and 32 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 3,853,057 to Rickert et al.

U.S. Patent No. 5,183,961 to Campoli et al.

U.S. Patent No. 5,277,096 to Campoli et al.

U.S. Patent No. 5,277,120 to Campoli et al.

U.S. Patent No. 5,277,121 to Campoli et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gabriel S. Sukman whose telephone number is (703) 308-8508. The examiner can normally be reached on M-F, 8:30-6:00, every other Friday off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Carone can be reached on (703) 306-4198. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gss



MICHAEL J. CARONE  
SUPERVISORY PATENT EXAMINER





Approved  
6/1/05  
MB

FIG. 1  
(PRIOR ART)

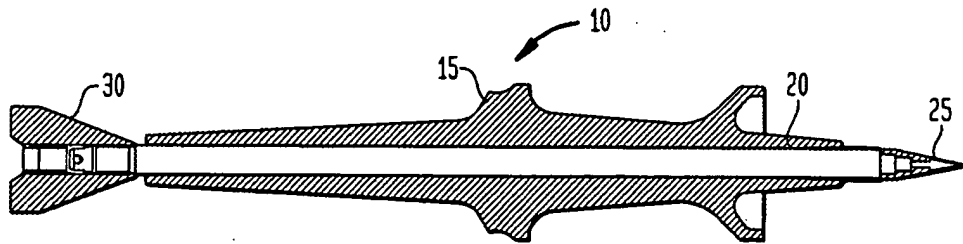


FIG. 2  
(PRIOR ART)

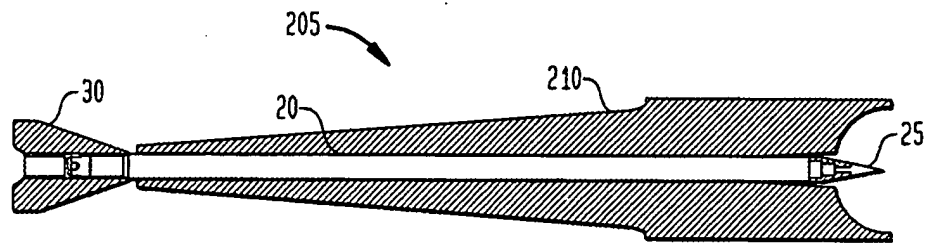


FIG. 3

